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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,021	02/16/2001	Chiaki Terasawa	684.3140	1607
5514	7590	07/27/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			SCHWARTZ, JORDAN MARC	
			ART UNIT	PAPER NUMBER
			2873	

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/784,021

Applicant(s)

TERASAWA ET AL.

Examiner

Jordan M. Schwartz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,10-13,15-26,28-41 and 43-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,10-13,15-26,28-39 and 50-58 is/are allowed.
- 6) ☒ Claim(s) 40,41 and 43-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/1/03</u> . | 6) <input checked="" type="checkbox"/> Other: <u>Foreign Reference</u> . |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 40-41 and 43-49 are rejected under 35 U.S.C. 102(a) as being anticipated by European application number EP-1-069-448.

EP'448 reads on these claims by disclosing the limitations therein including the following: a projection optical system (abstract) comprising a first imaging optical system (Figure 6, "G1"); the first imaging optical system including a mirror for reflecting and collecting abaxial light from the object (Figure 6, "M1"); a second imaging optical system for reimaging the image upon an image plane (Figure 6, the elements on the image side of the stop "AS" to the image plane); a second mirror for reflecting light from the first mirror to the image side with the abaxial light caused to pass outside an effective diameter of the first mirror (Figure 6, "M2"); a field optical system including three positive lenses (Figure 6, the two positive lenses near the intermediate image and just on the image side of "M1" and the third positive lens just on the object side of "AS"); the abaxial light refracted by the three lenses toward a direction nearing the optical axis of the three lenses (Figure 6); the light passing through the three lenses directed to the imaging optical system (Figure 6); and the first and second imaging optical system disposed along a common optical axis (Figure 6). EP'448 further discloses the field optical system

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including one lens having a negative power (Figure 6); the first and second mirrors adjoining along an optical path (Figure 6); the optical system for projecting a pattern of a mask onto a substrate (paragraphs 0032-0036, 0053-0055); laser light from one of an ARf or F2 excimer laser (paragraph 0011); the imaging optical system forming an intermediate image (Figure 6); the first imaging optical system comprising a first lens unit having positive power (Figure 6, "L11"); and a second lens unit having negative power between the first and second mirrors (Figure 6, element "L13").

Allowable Subject Matter

For applicant's information, the allowability of claims 40-41 and 43-49 has been withdrawn based upon the applicability of the EP'448 reference above.

Claims 1-2, 10-13, 15-26, 28-39 and 50-58 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: with respect to the allowable subject matter, none of the prior art either alone or in combination disclose or teach of the claimed combination of limitations to warrant a rejection under 35 USC 102 or 103. Specifically, with reference to independent claim 1, none of the prior art either alone or in combination, disclose or teach of the claimed projection optical system having the first and second imaging optical systems with the specific structure as claimed, the field optical system having the specific structure as claimed, and specifically including, as the distinguishing feature in combination with the other limitations, the claimed one positive lens of the field optical system as disposed adjacent the image plane side of the claimed first mirror. Specifically, with reference to independent claim 16, none of the prior art either alone or in combination, disclose or

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teach of the claimed projection optical system having the first and second imaging optical systems with the specific structure as claimed, the field optical system having the specific structure as claimed, and specifically including, as the distinguishing feature in combination with the other limitations, the claimed first and second field mirrors both having a concave surface. Specifically, with reference to independent claim 22 and 28, none of the prior art either alone or in combination, disclose or teach of the claimed projection optical system having the first and second imaging optical systems with the specific structure as claimed, the field optical system having the specific structure as claimed, and specifically including, as the distinguishing feature in combination with the other limitations, the optical system satisfying the set forth conditions. Specifically, with reference to independent claim 30, none of the prior art either alone or in combination, disclose or teach of the claimed projection optical system having the first and second imaging optical systems with the specific structure as claimed, the field optical system having the specific structure as claimed, and specifically including, as the distinguishing feature in combination with the other limitations, the claimed field lens unit disposed between the claimed first mirror and the second field mirror.

Response to Arguments

Applicant's arguments with respect to the above rejected claims have been considered but are moot in view of the new ground(s) of rejection set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jordan M. Schwartz whose telephone number is (571)

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272-2337. The examiner can normally be reached on Monday to Friday (8:00-5:30), alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached at (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jordan M. Schwartz
Primary Examiner
Art Unit 2873
July 21, 2004